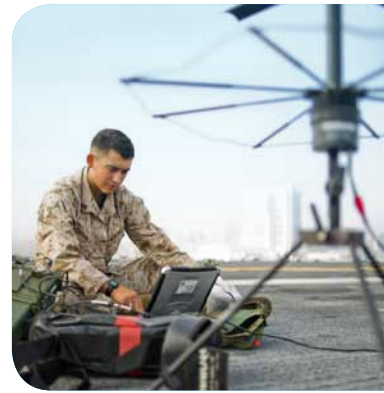


Exceptional service in the national interest



Defending U.S. National Security

Developing innovative technological solutions to solve the toughest national security problems



Sandia's Defense Systems & Assessments programs protect the United States by applying engineering, science and technology research and development to deter, detect, defeat and defend threats to national security. Such threats include an adversary's advanced military capabilities, an unstable country obtaining weapons of mass destruction, terrorists armed with improvised weapons and malicious hackers turning keyboards into instruments of cyberwar.

Expanding U.S. Military Capabilities

Sandia engineering and technological innovations are directed toward advancing U.S. military capabilities. For example, Sandia conducted a highly successful first test flight in 2011 of the Advanced Hypersonic Weapon (AHW) for the U.S. Army Space and Missile Defense Command. The Department of Defense is using AHW to develop and demonstrate technologies for Conventional Prompt Global Strike (CPGS), which would allow the military to deliver a conventional weapon strike anywhere in the world within hours. The AHW and hundreds of rockets and missiles have been launched from Sandia's Kauai Test Facility, a tenant of the U.S. Navy Pacific Missile Range

Facility established in 1962 to help the U.S. conduct atmospheric nuclear testing.

Surveillance

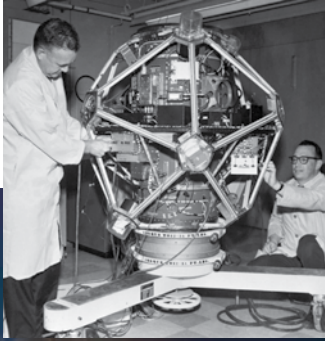
Sandia is a world leader in the advancement of synthetic aperture radar (SAR), a type of radar able to produce high-resolution, photo-like images of terrain and structures day or night and in good or bad weather. Recently, Sandia has made SAR lighter for unmanned aerial vehicles. When warfighters apply Sandia-developed coherent change detection algorithms to two images taken at different times, SAR detects changes to the environment that otherwise go unnoticed.

Nonproliferation

For more than 50 years, the National Nuclear Security Administration and the U.S. Air Force have jointly provided satellite sensor systems designed to detect atmospheric and space nuclear detonations. Beginning with the VELA satellite program for detecting nuclear bursts in the 1960s, Sandia has designed sensors and ground processing systems to support verification of international arms control agreements. Today, Sandia's



Global Burst Detector payloads are part of a constellation of Global Positioning System satellites circling the Earth that is greatly enhancing the nation's ability to monitor worldwide nuclear treaty compliance.



On July 16, 2011, the next-generation of satellite sensor systems designed to detect atmospheric and space nuclear detonations was launched on a Global Positioning System satellite. These systems are designed to significantly enhance the nation's ability to monitor nuclear treaty compliance over the entire planet.

Cybersecurity

With the rise of technology, protecting the cyber realm has become an essential part of national security. The nation depends on an electronic information infrastructure for the essential functioning of our government, military and economic systems. Cybersecurity is a complex problem, because it involves a highly dynamic landscape with multiple players, both from the private sector and the national security military sector. Sandia is providing the innovation and expertise needed to pursue cybersecurity solutions for the future.

Support for the Warfighter

Sandia supports combat military personnel by accelerating innovations to bring them quickly to the battlefield. For example, the prevalence of improvised explosive devices (IEDs) has prompted several Sandia innovations. Sandia developed a new low-cost bomb disablement tool, called the Stingray, that shoots a "blade" of water fast enough to penetrate steel. By partnering with a New Mexico small business, the device was sent to U.S. troops in Afghanistan. Sandia also is partnering with the University of New Mexico Health Sciences Center to learn how to better protect soldiers from traumatic brain injuries. By comparing supercomputer simulations of blast waves on the brain with clinical studies of veterans suffering from TBI, the researchers hope their work will lead to better military helmet designs.



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND2013-3183P.



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